The Learning Divide in Formal Adult Education: Why do low-qualified adults participate less?

Sebastiano Cincinnato[1], Bram De Wever[2], Martin Valcke[3]

[1] *Ghent University, Department of Educational Studies, Sebastiano.Cincinnato@UGent.be*

[2] *Ghent University, Department of Educational Studies, Bram.DeWever@UGent.be*

[3] *Ghent University, Department of Educational Studies, Martin.Valcke@UGent.be*

Abstract. **Objectives.** The aim of this paper is to investigate the reasons behind differential participation rates in formal adult education in Flanders (Belgium) between low- and high-qualified adults. Since the scientific literature is rather tentative in its explanations for existing differences, finding empirical grounds for these explanations is necessary. **Prior Work.** Most theories explaining differences in participation in adult education draw on psychological, economical, and/or sociological reasoning. According to the psychological strand, differences in participation can be explained by differences in dispositions. The economic strand, on its behalf, stresses the importance of socio-economic status for understanding differential participation rates. Finally, the sociological strand focusses on differences in volume and composition of (economic, cultural, social) capital. **Approach.** In the analysis, data from the Programme for the International Assessment of Adult Competencies (PIAAC) (n = 4134) were used. More in particular, applying logit regression modelling, we examined which factors were likely to explain the differential participation rate based on educational qualification. **Results.** The results suggest that differences in motivation to learn and differences in cultural capital are at the heart of the existing differences in participation between low- and high-qualified adults. **Implications and value.** The present study points out that the social background of potential adult education candidates should be accounted for in order to increase participation in formal adult education. Interventions aimed at increasing participation are not likely to resort the same effect on different population groups. Targeted interventions might be a more preferential approach when aiming at increasing participation of specific groups.

Keywords: adult education; participation; equality of opportunity; cultural capital; dispositions

Introduction

Within the scientific literature, the 'learning divide' in adult education is a well-documented phenomenon. International comparative research reveals recurrent patterns in participation in adult education. More in particular, highly educated, employed, and younger adults are more likely to participate in this type of education (Desjardins, Rubenson, & Milana, 2006; Hefler et al., 2011).Consequently, the term 'learning divide' points at the fact that the likelihood of participation in adult education is not equally distributed over different population groups; rather, it is correlated with population characteristics such as socio-cultural, socio-economic, and socio-demographic background[90]. As such, adult education has the capacity of enlarging social disparities instead of reducing them. More precisely, since adult education is considered a key component for individual and societal development (OECD, 1996; UNESCO, 1996; Commission of the European Communities, 2000; Commission of the European Communities, 2009), socially biased participation in adult education possibly deflects its potential for development and change, by allocating its beneficial outcomes (e.g.

[90] Looking at the participation rates according to highest educational qualification in the EU-28, for example, the Adult Education Survey (AES) of 2011 shows that only 2.5% of the adults with lower secondary education or less participate in formal adult education compared to 11.0% of the higher education adults, and 6.2% overall; in Belgium, there rates are respectively 3.9%, 11.4%, and 7.4% (EUROSTAT, http://epp.eurostat.ec.europa.eu).

income, productivity, health, life satisfaction, and social and civic engagement; Ferrer & Riddell, 2011; Schuller & Desjardins, 2011) unequally over the population. This might lead to the question whether adult education can be rightfully considered as an instrument of social change when its accessibility is disproportionate? In this respect, as Wößmann and Schütz (2006) argue, the debate on (adult) education can both be framed in terms of 'efficiency/efficacy' (i.e., maximizing the individual/societal benefits of education), and in terms 'equity/equality of opportunity' (i.e., the endeavour for a more fair and just society); and both approaches can be complementary to one another.

In order to deal with the question of 'equity', the focus of this paper, one must first understand the reasons for socially biased participation rates. Several theoretical models and conceptual frameworks have been developed over the years to understand these differences in participation (for an overview, see Silva et al., 1998; Boeren et al., 2010). These models and frameworks usually pinpoint micro- and/or macro-level differences as the source of differential participation in adult education. However, answers to the question of differences in participation are rather tentative and inconclusive. To compensate for this lacuna, the aim of this paper is to empirically investigate the explanations underlying the difference in participation in adult education; and more in particular the learning divide in adult education in Flanders (Belgium). In the context of this paper, we will focus particularly on the divide between *low- and high-qualified* adults. Furthermore, we limit the analyses to the *formal* field of adult education, which is the institutionalised field of adult learning leading to officially recognised certificates and diplomas (Groenez & Desmedt, 2008). In the first section, we present a summary of the theoretical models and frameworks on which our analyses were built. We differentiate between psychological, economic, and sociological explanations for the learning divide. Based on this theoretical background, the analyses focus on the factors most likely to explain the differential participation rate between low- and high-qualified adults. Data from the OECD-coordinated Programme for the International Assessment of Adult Competencies (PIAAC) (OECD, 2013a) were used. In section two, we give a more detailed explanation on the data used, the variables included, and the analyses performed. In section three, we present the results of our study, and finally, in the last section we argue for a broader interpretation of these results. Ultimately, in providing evidence for the processes underlying the difference in participation in adult education, we not only wish to encourage inquiry into social stratification in the field of adult education; but through a more detailed understanding of these differences in participation, we also hope to improve the objective probabilities of meeting the (political) objectives of 'equality of opportunity' and 'social cohesion' in and through adult education, which is strongly emphasised in Belgium and in the European socio-economical context (Boeren & Nicaise, 2009; Commission of the European Communities, 2009).

1. Theoretical background

Several theoretical/conceptual models for understanding participation in adult education have been developed. These models mostly draw on psychological, economical, and/or sociological reasoning. A first strand is the psychologically inspired strand. It sees participation as an outcome of a disposition towards participation. The link between disposition and behaviour, however, is not necessarily direct. Azjen and Fishbein (1980), for example, propose a model in which behaviour is the outcome of an intention towards that behaviour. This intention, in turn, is a function of attitudinal (i.e. beliefs and evaluation of the behaviour) and normative considerations (i.e. beliefs of other and motivation to comply with these beliefs). Rubenson (1977) sees participation as a function of both expectations towards

and needs for participation, and further distinguishes between objective reality (i.e. the presence of deterrents) and perceived reality (i.e., mediated individual response to deterrents). Cross (1981) suggests that participation in adult education is the result of a complex chain of responses (i.e., attitudes, expectations, barriers/opportunities), which places the individual in relation not only to him/herself, but also to his/her environment. Darkenwald and Merriam's (1982) Psychosocial Interaction Model is similar to Cross' model in that it conceptualises participation as a function of internal and external stimuli, although they stress the importance of socio-economic factors as well (through its impact on 'pressure' to learn). Finally, Baert, De Rick, and Van Valckenborgh (2006) present a more comprehensive model as it integrates different elements of the other models into one coherent model. At the centre is the individual and a chain of responses starting with the perception of a(n) (educational) need. This need is influenced by the individual's biography (socio-demographic, psychological, and educational characteristics, and living conditions). This perception of an educational need, jointly with attitudinal and normative considerations, influences an educational demand and ultimately educational participation. Actual educational participation, however, equally depends on attributes pertaining to the fields of adult education and lifelong learning (i.e., characteristics of the learning process, structural/organisational context, and cultural context). In sum, from these models we can infer that differences in participation in adult education are the consequence of differences in dispositions, such as intention, attitude, (perceived) need, etc.

A second strand of models draws from an economic framework; more precisely the human capital perspective and rational-choice theory (Becker, 1993). Investments in education are seen as beneficial because they will increase productivity and simultaneously individual welfare (both monetary and non-monetary). However, these investments entail (direct and indirect) costs (e.g., tuition fees, travel expenses, opportunity costs) as well. So ultimately, individuals will participate in adult education if (perceived) benefits outweigh (perceived) costs (e.g., Heckman & Klenow, 1997; Bassanini, Booth, Brunello, De Paola, & Leuven, 2005; Cunha, Heckman, Lochner, & Masterov, 2006). Yet, the way costs and benefits are perceived is not uniform. Firstly, it depends on individual background attributes (e.g., age, gender, SES), secondly on employment characteristics (e.g., employment status, occupation, earnings), and lastly on societal variables (e.g., GDP per capita, unemployment rate) (Cohn & Hughes, 1994). Ultimately, this economical perspective implies that differences in participation can be explained by differences in socio-economic status.

A third strand, inspired by sociology of education, stresses the importance of one's social position within society because this position determines opportunities. Essentially, individuals and groups can be positioned within society based on the volume (i.e., how much?) and composition (i.e., which capital?) of their 'capital' (Bourdieu, 1984). 'Capital' is a multi-dimensional concept: it is not only regarded as an economic resource (e.g., income), but also as a cultural (e.g., qualifications), and a social resource (e.g., social networks) (Bourdieu, 1997). Furthermore, social positions are socially hereditary: through the workings of socialisation, primarily in the family and secondarily in the education system, social positions are passed on from parents to children (Bourdieu & Passeron, 1990). Nevertheless, society can be conceived as a social space in which individuals and groups struggle for the best social positions, meaning that social heredity does not equals social fatality. Individuals and groups can and do change their social position by mobilising and investing in their capital – either by increasing the volume or by changing its relative composition. But since resources are not equally distributed, neither will be the outcomes of the social struggles. Adult education can be seen as a particular social field in which individuals and groups engage in order to increase their capital, and thus ameliorate their social position. In sum, explanations for differences in participation can be found in differences in volume of capital, and its relative composition.

From this brief literature overview, it can be observed that different theoretical frameworks for differences in participation in adult education coexist and that these approaches coincide with different scientific disciplines. Furthermore, these frameworks are not mutually exclusive. Within the scope of this paper, we further focus on the differences in participation in formal adult education based on educational qualifications, because this is one of the most important and recurring themes within adult education (Boeren, 2009). Therefore, the research question guiding the study is:

> *Which factors explain the difference in participation in formal adult education of low- versus high-qualified adults?*

Drawing from the theoretical frameworks, we postulate a number of hypotheses. First, based on the *psychological framework*, we expect high-qualified adults to participate more in adult education than low-qualified adults because they are differently (positively) disposed towards adult education. Differences between low- and high-qualified adults can therefore be explained by differences in attitude, (perceived) need/value, intention, and/or cognitive skills (e.g., Svensson, Ellström, & Åberg, 2004). Based on the *economic framework*, we anticipate high-qualified adults to participate more because they occupy better positions in the labour market, providing them with more opportunities to participate (Boudard & Rubenson, 2003), or because they have more return on investment (Heckman & Klenow, 1997). Differences between low- and high-qualified adults can thus be explained by differences in, for example, occupational status and income. Finally, from the *sociological framework*, we infer that high-qualified adults are more likely to participate because they occupy a relatively better social position in society. Differences in participation can be explained by differences in capital (economic, cultural, and social) held by individuals in each position (e.g. Sargant & Aldridge, 2002; Boudard & Rubenson, 2003; Strawn, 2003; Thompson, 2009).

2. Methodology

2.1. PIAAC data and sample

Secondary analyses on the PIAAC data were performed. PIAAC is an OECD-coordinated (Organisation for Economic Co-operation and Development), internationally comparative survey that directly measured people's (aged 16 to 65) skills in literacy, numeracy, and problem-solving in technology-rich environments (OECD, 2013a). Furthermore, the PIAAC-survey enquired extensively into people's background. As such, the data not only contain information on adults' engagement in formal education, but also provide measures on dispositions (readiness to learn, literacy proficiency), economic capital (labour market position), and social/cultural capital (level of trust, parental education level, reading practice). Finally, data in PIAAC were calibrated, weighted, and non-response-bias-corrected so as to make the data representative for its respective country (OECD, 2013b).

Although PIAAC-data is internationally comparative, the present analyses are based on the Flemish (Belgium) data in order to control for potential macro-level effects – i.e. the effects of the type of 'welfare-state regime' (Esping-Andersen, 1990). The Flemish sample initially has 4,322 observations of which 358 participated in formal adult education. However, we included only those respondents in the analysis for whom we had information on all the variables included in the analysis; this in order to eliminate the potential effect of item non-response. Therefore, the analysed sample has 4,134 observations of which 351 participated in formal adult education.

In order to capture the complex sampling and estimation approaches used in PIAAC, replication-based variance estimation is used (OECD, 2013b, Chapter 15). In this estimation,

the full sample is subdivided into specifically designed replicate subsamples that mirror the design of the full sample. The variance of the full sample estimate is computed as the sum of squared deviations between each replicate subsample estimate and the full sample estimate. The general replication formula is

$$Var(\hat{\theta}) = c\sum(\hat{\theta}_i - \hat{\theta}_0)^2, \quad (1)$$

where c is constant, whose value changes depending on the replication method used[91], θ_0 is the full sample estimate, and θ_i is the estimate for replicate i.

2.2. Data analysis: logit regression modelling

Difference in participation is analysed using binary logit regression modelling. More in particular, the likelihood of participation in formal adult education is modelled (participation against non-participation). In the base model, we estimate the effect of educational qualification (based on the ISCED) on likelihood of participation. In subsequent models, variables capturing elements from the different frameworks are added (cf. infra). Assessing the change in correlation between the primary predictor (i.e., educational qualification) and the dependent variable (i.e., participation in formal adult education) allows us to investigate explanations for differential participation rates between low- and high-qualified adults.

Due to the complex variance estimation approach used in PIAAC (cf. supra), the analyses were performed with the Wesvar software[92]. To assess the change in correlation between the primary predictor and the independent variable, we primarily rely on hypothesis testing through the adjusted Wald *F* test. As a ratio of the explained variance compared to the unexplained variance, the *F*-statistic captures the significance of the predictors in the model (Field, 2013). In order to test the hypothesis that the model predictors are significant (H_0: Dβ = δ), Wesvar calculates the F-ratio as follows (Westat, 2007, Appendix C):

$$F_{d,df-d+1} = \frac{df-d+1}{df*d} T_d^2, \quad (2)$$

where *F* has a central distribution with *d* (i.e., the number of parameters in the model) and *df – d + 1* degrees of freedom (with *df* being the number of replicate weights used[93]). The F-statistic is an adjusted version of the Hotelling's T^2-statistic (Westat, 2007, Appendix C).

To find the covariates most likely to explain the effect of educational qualification on participation in formal adult education, we assess the effect of their 'en bloc' introduction (i.e., by explanatory framework) on the correlation between the educational qualification and the likelihood of participation. More in particular, we are concerned with the question whether the introduction of these covariates cancels out the effect of educational qualification.

2.3. Models

[91] More in particular, we can distinguish four different replication approaches. Firstly, the paired jackknife approach (JK2) holds that constant *c=1*. Secondly, in the random groups approach (JK1), *c = (g-1)/g*; and *g* equals the number of replicates. The balanced repeated replication method (BRR) holds that *c = 1/g*. And finally, in Fay's method, $c = 1/[g(1-k)^2]$; with *k* being a weighting factor for Fay's method (for more information, see OECD, 2013b; chapter 15). For the Flemish data, the paired jackknife (JK2) approach is used, so *c=1*.

[92] Software is accessible on the following website: http://www.westat.com

[93] The number of replicate weights used for the Flemish replication method, paired jackknife (JK2), is 80.

In our *baseline model* (Model 1), we estimate the effect of educational qualification on the likelihood of participation in formal adult education. **Participation in formal adult education** is a derived variable based on four reference variables in the PIAAC-questionnaire[94]. It reflects participation or non-participation in formal adult education in the 12 months preceding the survey. Since the PIAAC-participants are aged between 16 and 65, some (younger) respondents might still be in their initial educational cycle. Respondents aged 25 or more are, without further differentiation, part of the target population. Respondents aged 16 to 24, on the contrary, are only considered as target population if they have finished their initial education. Further, **educational qualification** is coded according to the ISCED97-classification. It has been recoded to have three response categories, namely 'less than upper secondary education' (ISCED 0, 1, 2, 3C(short)), 'at least upper secondary education' (ISCED 3A, 3B, 3C(long), 4A, 4B), and 'higher education' (ISCED 5 or higher).

In *Model 2*, we add the covariates from the *psychological framework* to the base model. Firstly, as a proxy for cognitive skills, we include **literacy proficiency** in the analysis. PIAAC uses ten plausible values to capture proficiency in literacy. These have been calculated by combining IRT scaling of the cognitive items with a latent regression model using information from the background questionnaire. The PIAAC Technical Report provides a detailed description of the scaling procedures (OECD, 2013b; Chapter 17). In this study, we rely on the first plausible value. Secondly, as a proxy for motivation, we use the **'readiness-to-learn'**-scale. This scale was also constructed using IRT scaling of self-reported Likert-scaled items (OECD, 2013b; Chapter 20).

In *Model 3*, we assess the effect of *economic* covariates on the relation between educational qualification and the likelihood of participation by adding them to the base model. We only included one variable in the model[95], namely **labour market position**. It distinguishes between five categories based on ISCO-08 occupational classifications. More in particular, we differentiate between 'skilled occupations' (ISCO 1, 2 & 3), 'white-collar, semi-skilled occupations' (ISCO 4 & 5), 'blue-collar, semi-skilled occupations' (ISCO 6, 7 & 8), 'elementary occupations' (ISCO 9), and 'at least 12 months without paid work'.

Finally, in *Model 4*, the effect of *sociological* covariates on the relation between educational qualification and the likelihood of participation is captured through four covariates. Besides the **labour market position** as a proxy for economic capital, we consider four additional covariates, mainly seizing the individual's cultural capital. First, as a measure of the cultural capital acquired through the family, we use **highest parental educational level**, and differentiate between a low (i.e., both parents have no higher than lower secondary education), a medium (i.e., at least one parent has higher secondary education), and a high level (i.e., at least one parent has tertiary education) of cultural capital. Secondly, **reading practices at home** addresses cultural capital in form of cultural practices. This variable was created through IRT-scaling of self-reported Likert-scaled items (for more details, see OECD, 2013b; Chapter 20). Finally, as a proxy for social capital, we use the **level of trust**. This scale was constructed on the basis of two Likert-scaled items (Cronbach $\alpha = .67$). Table 1 presents an overview of the descriptive statistics of all variables used in the different models and Table 2 presents an overview of the correlations between the predictors.

[94] Codebook of the derived variables can be downloaded from the OECD-website: http://www.oecd.org/site/piaac/publicdataandanalysis.htm

[95] We equally considered adding 'income' as a variable of interest in our analyses. However, income (from employment) is only known for employees and the self-employed. So, financial information on the unemployed and those out of the labour force is lacking. Furthermore, income was enquired on an individual level, not a household level. As such, our insight into disposable income is restricted.

Table 5 Descriptive statistics on the variables included in the model

Variable	n	%
Participation in formal adult education		
Not participated	3783	92
Participated	351	8
Highest educational qualification		
Lower secondary education or less	707	17
Higher secondary education	1847	44
Tertiary education	1580	39
Labour market position		
Skilled occupations	1561	39
Semi-skilled, white collar occupations	806	19
Semi-skilled, blue-collar occupations	598	14
Elementary occupations	264	6
No paid work in at least 12 months	905	21
Cultural capital (parent's education)		
Lower secondary education or less	1816	44
Higher secondary education	1412	34
Tertiary education	906	22

Variable	Mean	St. Dev.	Min.	Max.	n
Literacy	275.37	47.47	88.63	411.20	4134
Readiness to learn [a]	1.74	.90	-1.23	5.00	4134
Cultural capital (reading at home) [a]	1.92	.85	-1.86	6.00	4134
Social capital	3.67	.90	1.00	5.00	4134

Note. [a] Negative minimal values are due to the calculation method of the scales, i.e. IRT-scaling.

3. Results

In Table 3, we present the model statistics and hypothesis testing results of the logit regression models. Model 1 only includes educational qualification. This model explains a significant proportion of the variance in likelihood of participation ($F = 18.23$; $p < .001$). In other words, people's qualification level is significantly related to participation in adult education.

In model 2, we add the psychological covariates to the baseline model. The model as a whole is significant ($F = 22.86$; $p < .001$), meaning that educational qualification on the one hand and cognitive skills and motivation on the other, are significantly related to the likelihood of participation. Moreover, the variance in the likelihood of participation explained by the level of schooling has dropped considerably as compared to the baseline model. Nevertheless, the

relation between people's qualification level and participation is still significant ($F = 4.55$; $p < .05$), suggesting that the effect of qualification level only partially coincides with differences in cognitive skills and motivation.

In model 3, we include the economic covariate in the baseline model. Overall, the model is significant ($F = 6.76$; $p < .001$), but the results also suggest that people's labour market position does not strongly interfere with their qualification level effect on the likelihood of participation ($F = 12.46$; $p < .001$). In other words, the figures propose that the effect of educational qualification on participation in adult education cannot be explained by differences in the labour market position.

Finally, in model 4, we add the sociological covariates to the baseline model. As a whole, the model is significant ($F = 10.55$; $p < .001$). Interestingly, the results suggest that the effect of educational qualification can be explained by differences in economic, cultural, and social capital. Adding these covariates to the model actually nullifies the effect of people's qualification level on their participation in adult education ($F = 2.12$; $p = .127$).

Table 6 Hypothesis testing and model statistics from the logit regressions

	Models			
	1	2	3	4
Hypothesis testing (F-ratio)				
$B_{\text{all parameters}} = 0$ [a]	18.23 ***	23.86 ***	6.76 ***	10.55 ***
$B_{\text{ed. qualification}} = 0$ [b]	18.23 ***	4.55 *	12.46 ***	2.12
Model statistics				
Log-Likelihood (intercept only)	1,894,714	1,894,714	1,894,714	1,894,714
Log-Likelihood (model)	1,862,874	1,830,618	1,860,758	1,808,145
N (weighted)	3,333,804	3,333,804	3,333,804	3,333,804
N (unweighted)	4,134	4,134	4,134	4,134
R^2 (Nagelkerke)	.022	.044	.023	.059

Note. * $p < .05$, ** $p < .01$, *** $p < .001$; [a] Tests the hypothesis that all parameters are insignificant; [b] Tests the hypothesis that the effect of educational qualification is insignificant.

In order to gain a better insight in the relation between educational qualification and additional covariates on the one hand and the likelihood of participation on the other, we present the logit regressions coefficients and corresponding odds ratios in Table 4. The results for Model 1 show that the learning divide in formal adult education in Flanders is situated between low-qualified (i.e., lower secondary education or less) and medium-qualified (i.e., higher secondary education) adults on the one hand and high-qualified (i.e., tertiary education) adults on the other. In fact, compared to low-qualified adults, high-qualified adults are 2.6 times more likely to participate in formal adult education ($p < .001$). Compared to medium-qualified adults, they are 1.8 times more likely to participate ($p < .001$). Furthermore, although the results indicate that medium-qualified adults are 1.4 times more likely to participate than the low-qualified, this difference is non-significant ($p = .10$).

Table 7 Unstandardized coefficients and odds ratios from the logit regressions

	Models							
	1		2		3		4	
	b	Odds ratio	b	Odds ratio	b	Odds ratio	b	Odds ratio
Intercept	-2.984 ***		-4.021 ***		-2.894 ***		-3.497 ***	
	(.180)		(.429)		(.193)		(.338)	
Educational qualification [1]								
Higher secondary	.342	1.408	.180	1.198	.392	1.480	.151	1.163
	(.204)		(.208)		(.213)		(.220)	
Tertiary	.943	2.568 ***	.561	1.752 *	.979	2.663 ***	.425	1.530
	(.204)		(.228)		(.227)		(.246)	
Tertiary vs. higher secondary	.601	1.824 ***	.275	1.463 ***	.587	1.799 ***	.275	1.316
	(.118)		(.141)		(.143)		(.151)	
Literacy			.002	1.002				
			(.002)					
Readiness to learn			.374	1.453 ***				
			(.056)					
Labour market position [2]								
Skilled					-.114	.893	-.121	.886
					(.180)		(.178)	
Semi-skilled; white collar					-.310	.733	-.242	.785
					(.177)		(.179)	
Semi-skilled; blue collar					-.126	.882	-.037	.964
					(.177)		(.177)	
Elementary					-.110	.896	.135	1.145
					(.266)		(.264)	
Parent's education [3]								
Higher secondary							.227	1.255
							(.152)	
Tertiary							.410	1.507 **
							(.179)	
Reading practice at home							.530	1.698 ***
							(.066)	
Level of trust							-.107	.898
							(.062)	

Note. * $p < .05$, ** $p < .01$, *** $p < .001$; Standard errors are in parentheses; [1] respondents with lower secondary education or less are the reference category; [2] respondents at least 12 months without paid work are the reference category; [3] both parents having lower secondary education or less are the reference category.

Adding the psychological covariates in Model 2 clearly affects the relationship between educational qualification and participation in adult education. In fact, when controlling for differences in cognitive skills and motivation, the higher likelihood of high-qualified adults' participation in formal adult education (compared to low-qualified adults) is reduced to 1.8 ($p < .05$), and among medium-qualified it is reduced to 1.2 ($p = .40$). Further, high-qualified

adults are 1.5 times more likely to participate than the medium-qualified ($p < .001$). However, in addition the results suggest that differential participation rates among individuals with different educational qualifications are not due to differences in cognitive skills ($p = .20$), but to differences in motivation ($p < .001$). In other words, the results suggest that low-qualified (and medium-qualified) adults participate less in formal adult education because appear to be less motivated to learn. Therefore, we can also more safely assume that the learning divide in formal adult education can, at least partially, be grounded in differential dispositions.

The results of Model 3 indicate that differences in labour market position do not serve as an explanation for differential participation rates among low-, medium-, and high-qualified adults. Overall, occupational status is not significantly related to the likelihood of participation. Furthermore, even when controlling for differences in occupational status, high-qualified adults are still respectively 2.7 and 1.8 times more likely to participate than low-qualified adults ($p < .001$) and medium-qualified adults. The difference in participation rate between medium- and low-qualified adults is, as in the baseline model, non-significant ($p = .07$). Stated otherwise, the results suggest that the lower participation rate among low-qualified adults is not due to their occupational positions that offer fewer opportunities to participate in formal adult education.

Lastly, adding sociological control variables to the baseline model in Model 4 revealed that these variables significantly affect the correlation between educational qualification and the likelihood of participation. More precisely, these variables neutralize the effect of the qualification level on the likelihood of participation. The results furthermore indicate that an explanation for the differential participation rate among the different groups is not found in differences in economic or social capital, but rather in differences in cultural capital. Both parental educational level and reading practices have a strong impact on the likelihood of participation in formal adult education. More in particularly, adults of whom at least one parent is a graduate from tertiary education are 1.5 times more likely to participate in adult education ($p < .01$), and an increase of one unit in the reading practices-scale results in an increase by factor 1.7 in the likelihood of adult education participation ($p < .001$).

In conclusion, our study suggests that the learning divide in formal adult education between low- and high-qualified adults can be (partially) explained by differences in disposition on the one hand, or differences in cultural capital one the other. More precisely, it seems that low-qualified adults are less positively disposed towards adult education resulting in a lower participation rate. Alternatively, low-qualified adults participate less because they possess less cultural capital. Interestingly, our results also provide evidence for the fact that differences in economic resources do not contribute to the difference in participation in formal adult education in general, and do not serve as a possible explanation for differential participation rates between low- and high-qualified adults in particular.

4. Discussion: a Bourdieusian reading

Firstly, our study provides evidence that differences in participation rates in formal adult education based on people's educational qualification can be both explained by differences in dispositions towards adult education or differences in cultural capital. A second substantial finding is that differential participation rates cannot be explained by differences in economic capital. However, the 'psychological' explanation is not necessarily at odds with the 'sociological' one. In fact, in the view of Bourdieusian theory, they are clearly intertwined: through the concept of the 'habitus'.

The ‘habitus’ is a set of dispositions orientating one’s perceptions and practices (Bourdieu & Wacquant, 1992). The way we talk, dress, eat, the newspapers we read, the political parties we vote for, our success in school, … overall, our behaviour is determined by our habitus, our dispositions[96]. Distinctive of the habitus, as conceived by Pierre Bourdieu, is that it is class-related, or broader, related to our social position (Bourdieu, 1984). This social position, the place we occupy in society, is ordered along two principal axes, namely the volume and composition of our ‘capital’, primarily our economic and cultural capital. ‘Classes’ can be distinguished on the basis of the volume of their capital (more as opposed to less capital), whereas ‘class fractions’ can be distinguished on the basis of the composition of their capital (more economic than cultural capital as opposed to more cultural than economic capital). The resulting social field is a complex mosaic of social positions, each with their distinctive habitus[97]. In other words, the habitus can be (causally) linked to one’s social position, and thus capital, i.e. primarily the social position of the family (Bourdieu & Passeron, 1990). The fact that our study reveals that both motivation (as an element of disposition) and (parental) cultural capital strongly relate with participation in adult education, and more so than adults’ level of educational qualification, is indicative of this notion.

The logic, however, is one of circular causality. Through the habitus, the social structure is reproduced. People from the working class, for example, develop certain views on the opportunities society has to offer, and act upon these ideas. As such, they will reproduce their social position as working class (Dumais, 2002). To fully capture the link between habitus and cultural capital on the one hand, and practices on the other, Bourdieu points out that we also have to consider the ‘field’ in which both are operative (Bourdieu, 1984). The concept of field denotes ‘… more or less autonomous microcosms of social practice…’ (Flemmen, 2013, p. 329), for example the field of formal adult education. Each field is, on the one hand, defined by the capital that is accumulated within it, and by the capital that is used as ‘currency’ to this end on the other. Firstly, in the field of formal adult education, people primordially struggle for the accumulation of cultural capital (in the form of educational qualifications) – although it can also be argued that some participate in order to enlarge their economic capital (e.g., educational participation as a means of improving their labour market position) or social capital (e.g., educational participation as a means of extending one’s social network). Secondly, the results of our study are indicative of cultural capital being the most important currency within the Flemish field of formal adult education. More particularly, the results indicate that both economic and social capital have no significant impact on participation in formal adult education. Since cultural capital is at stake, it equally explains why low-qualified adults participate less than high-qualified adults, for the former lack the means for participation. It would, however, be interesting to examine whether the same logic applies in other countries/social systems. Boeren *et al.* (2012), for example, established that motives to participate in adult education also depend on the education system and social policy, and that countries can be ‘clustered’ around welfare-state regimes types. From this, we gather that participation in formal adult education might be linked to other forms of capital in other countries; and that differences between countries could be linked to differential macro-institutional settings.

[96] Notice that some authors argue that ‘determinism’ in Bourdieu’s writings should not be interpreted in terms of ‘fatality’, but rather in terms of ‘causality’ (e.g. Peters, 2014).

[97] In its most simplified form, the social space is composed of three basic classes: the upper class, the middle class, and the working class. Within each class, we can further differentiate between class fractions – e.g. within the upper class we can differentiate between fractions with more economic capital, such as captains of industry, and fractions with more cultural capital, such as university professors.

In view of this, we argue that the results of our study are relative to Flanders (Belgium). This is an important limitation. Further investigation of between-country differences in effect of (cultural) capital and dispositions on the likelihood of participation would be interesting, and could permit us to establish correlations cross-nationally. A second limitation derives from working with secondary analysis. As PIAAC was primarily a survey into the competencies of adults, not into adults' engagement in adult education, potentially relevant information on participation in adult education is not available or only available by proxy. This means on the one hand, that potentially confounding variables could not be controlled for in our study, and, on the other hand, that some of the measures used in our study only incompletely reflect the concepts of the theoretical framework. Finally, it should be noted that the results presented in this paper cannot rightfully be interpreted in terms of causality, but only in terms of correlation. A causal relationship can only be assumed on theoretical grounds.

In sum, our results direct us to question the capacity for the Flemish formal adult education system to be a means of change; or more precisely, a socially undifferentiated means of change. In general, we established that adults endowed with more cultural capital (the high-qualified) are more likely to participate, ultimately improving their social position through cultural capital accumulation. However, those in most need of cultural capital (the low-qualified) are less likely to participate; and their participation seems to be inhibited precisely by their lack of cultural capital. In other words, the field of formal adult education may not be a likely instrument for the latter to improve their social position; to bring about change in their 'condition'. However, this does not necessarily entail that change for them is impossible altogether. In fact, our study rather points out that in order to increase participation in formal adult education, social background of the potential candidates should also be accounted for. Interventions to increase participation are not likely to resort the same effect on different population groups; and, thus, targeted interventions might be a more preferential approach when aiming at increasing participation of specific groups. These approaches should not only be confined to the field of adult education, but should be considered in the field of initial education as well. Since individual cultural capital is (partially) a product of the prior educational career, interventions can also be aimed at increasing the level of cultural capital within initial education.

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